

Office Memorandum • **CONFIDENTIAL** UNITED STATES GOVERNMENT

TO : Chief, Engineering Division, OC

SPM 7-678
DATE: 25 November 1957

FROM : Chief, Supplemental Programs Division, OC

SUBJECT: CS-8 Antenna

25X1

1. Attached herewith is a discussion of the antenna required to complete the CS-8 system. A development contract will probably be required because no usable antenna is known to exist in either military or commercial sources. 8/7912-50-600 funds are available to cover the cost.

2. We request action be taken to obtain one antenna for the CS-8 system prior to completion of the receiver.

25X1

Attachment:
CS-8 Antenna Requirement

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ATTACHMENT + SPM 7-678

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CS-8 ANTENNA REQUIREMENT

2127

1. The development of an antenna remains to complete the CS-8 system. We therefore request that an antenna be developed for delivery not later than the completion date of the receiver. The following design characteristics are required:

- A. Frequency range from 30 mcs. to 600 mcs. in one antenna.
- B. A bidirectional beam pattern is permissible provided the maximum gain exceeds a dipole and holds to one bearing throughout the entire range.
- C. Antenna input impedance as established by the receiver can be either 150 ohms unbalanced or balanced.
- D. Circular polarization is preferred but should the antenna be linearly polarized, mounting arrangements are required for both vertical and horizontal positioning.
- E. Antenna portability is required for easy mounting and movement between fixed points of operation.
- F. A mounting mast should be included in ¹⁸ ~~24~~ inch segments for height settings between four to fifteen feet. The base for supporting the mast might be a tripod which can self support the antenna at the lower elevations. Fittings should be provided to guy the mast at the higher limits.
- G. All elements of the antenna cannot exceed ¹⁸ ~~24~~ inches in the collapsed condition.

2. Two possibilities appear promising for the development of this antenna in both the logarithmic spiral and logarithmic periodic. A reference for the periodic antenna can be found in the "1957 IRE National Convention Record" titled Broadband Logarithmic Antenna Structures by R. H. DuHamel and D. E. Isbell.

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